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A Day in the Trenches

Deep in the heart of Exploratory-class Cube #347, a drone awoke from regeneration. This action in itself was not unusual, it was repeated hundreds of times each hour, but the drone in question was different: Delta was the current subdesignation of 12 of 19.

An odd drone to say the least, Delta began life as twin girls, bonded as closely together as two entities could be and yet continue to be physically separate. When their colony was assimilated, the girls had recently left the house of their three parents to strike out on their own. Entry into the Collective made original thoughts of career opportunities highly irrelevant. Trama combined with the rare occurrence of assimilation imperfection melded the minds of the sisters into one. Now, for all practical purposes, Delta was of a single mind inhabiting two bodies.

In one smooth action, both bodies A and B opened their eyes and activated optical implants. However, the dim shaft adjacent the alcove tier was not the sight which they focused upon, but rather the view from cameras within the central warp core. Two slightly different points of view took in the pulsating green light, around which active members of the engineering hierarchy moved. For efficiency Cube #347 relied primarily on the single power source; but for redundancy, should anything every happen (which occurred at distressing regularity), ten redundant cores, all of which looked exactly identical to the primary and could perform the same job, would be available as back-up.

Delta's subjective morning routine commenced. Body A disengaged her clamps and stepped from the alcove with a muffled hiss. Mid-motion, a transporter whisked the body to the central core, forward momentum transforming into a couple of steps across the expanse of floor to a data port near the core, whereupon she subsequently plugged herself directly into a computer. Engineering activities for the last six hours began to scroll in Delta's mind. Meanwhile, body B similarly removed herself from her alcove and was also captured in a transporter beam. She took a position next to herself, jacking into a second port and commenced to download the maintenance list for the duty shift.

Cube #347, like all Borg ships, had the ability to regenerate massive damage. However, there were always hiccups in the system which occurred simply because a complicated piece of hardware like a cube continually broke down in small ways. Buckled hull plating was one thing; a blown fuse was completely different. And, to be realistic, it was /expensive/ in terms of power and materials for ship-regeneration always to be active. It was much cheaper to employ the labor provided by one thousand engineering drones and many industrial-sized replicators.

Delta was the current head of the engineering hierarchy, a position appointed by the Captain at the start of each assignment. It was her duty to coordinate maintenance activities throughout the ship. She was also in charge of general supplies, salvage, cargo, and emergencies which threatened cube integrity. As she worked, Delta mumbled to herself outloud, her way of mentally organizing the day's activities,

"Auxiliary Core #1 has finally been recharged. It is ready to be brought on-line at any time," said body A.

Muttered body B at the same time A was talking: "We need more hydrogen! I said that the comet we picked up last week wouldn't do much beyond eighth fill the holding tanks!"

"Sensor grid #29 is realigned at last, and all micrometeoroid bits picked out after the momentary deflector 'failure' yesterday."

"I see 133 of 240 has burnt out the transporter controls in subsection 15, submatrix 8 again. That needs to be fixed before too many complaints are registered concerning hiking up and down the catwalk stairs. I don't lay good odds on what his fellow drones in the vicinity will do to him before the shift is done."

The nonconversation continued for a while. Backlogs of information were finally cleared and a list of maintenance activities built. Priorities ranged from painting the hull to repairing a cracked conduit. Delta sighed (both her bodies reacting in unison)...another typical day in the trenches.

The cube was currently hunting a species designated #8511, a nearly abandoned ship of which had been discovered over six months prior. A systematic search of twenty-seven systems was taking place, but Delta had lost interest around number twelve. She could easily find the precise order in the count the ship was at, but it was irrelevant as far as she was concerned. The low amounts of gasses in the replenishment tanks was much more important at the moment.

{Captain,} called Delta through the intranet. Although body A was still in the power engine core and body B at Auxillary Core #1 to directly observe that system's power-up, the mind was quite singular. {We need to make a supply run soonest. Hydrogen and oxygen gasses are low, and we could use some nitrogen, xenon, and elemental carbon as well. A few rare earth and metal asteroids are a slightly less urgent priority, but could be used.}

Captain's mental reply filtered back, {Soonest? How soon?}

{I'll have to start shutting down the atmospheric component of life-support in a rotating schedule through the sections within forty hours. We can all survive a couple hours without air, but it is a pain...we do need to breath sometime.}

Captain began to shuffle through the most recent on-board supply list, absorbing the data. {Delta, next time tell me a little sooner when we begin to run this low of necessary items.} A sigh, followed by Captain initiating a consensus cascade through the hierarchies of engineering, sensors, and his own command and control. Star charts flashed through active memory, travel vectors overlaid on current location and cross-referenced with the assets of known systems. Finally a pit stop was proposed.

{This system will have the comets and asteroids we need. Initiating course correction,} said Captain as he did so. The path of Cube #347 changed slightly as it angled off to a new heading towards a binary system with catalogue number Theta 34d.

Delta was analyzing the sensor data of the twenty comet nuclei nearest the cube. The ship had dropped out of transwarp in Theta 34d's Oort cloud, the englobing mass of icy left-overs drifting far from their dim orange primaries and dating back to the system's formation. The data was confusing, to put it kindly, for Sensors had relayed it to Delta without bothering to clean it up. As far as Delta could tell, Sensors had been observing the nuclei in some of the more obscure frequencies. That in itself was not unusual, as Sensors, one of the three nonhumanoids on board, experienced the universe in a fundamentally different manner than the rest of the crew.

{Sensors, this raw data is impossible. Frankly, I'm getting a headache. I do not have all day to puzzle this mess out. I've figured out the water signature, only because that is the most common compound in a comet, but what is everything else?} exasperatedly sent Delta to Sensors. She mentally highlighted figures and numbers within the shared datastream.

{Quantum-resonating [inverse] gravametric [flutters] is the best method to observe and quickly catalogue inert planetoids such as comets and asteroids,} returned Sensors smugly, {especially when funneled through Sensor's native senses.}

Delta slowly spelt out her response, as if to a drone assimilated for bulk instead of brains, {I do not have your senses.} The words had been said many times in many situations by many different crew members, but never seemed to sink in. They more than likely would fail this time as well. {It IS NOT perfectly apparent to me, with or without implant augmentation. If you do not clean up this data into something I can use, I'll make sure your subsection, submatrix is the first in the atmospheric system shut-down. I cannot promise how long the shut-down will last.}

Several minutes later, false color images with compounds and elements neatly correlated to the various hues was dropped into active memory. Delta swiftly retrieved it with a rote {Thank-you} which none-the-less conveyed the distinct impression that engineering, the drones (and especially Delta) that controlled one's physical environment, was not a hierarchy to mess with.

The comet nuclei contained mostly water, as expected, with significant amounts of lighter elements such as carbon. One comet in particular had large amounts of carbon with traces of heavier elements, but in the end it did not matter. Each nucleus would be tracted into a cargo hold and melted down. The "dirty-water" would thence be placed in holding tanks, from which hydrogen and oxygen could be distilled, and any compound/element sludge leftover similarly processed and put to use.

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Warmth in darkness. Suspended complex chemical interactions recessitated as enzymes, becoming pliable as temperatures rose above the freezing point of water. Other proteins, not nearly as complex an organ as a taste bud or an olfactory receptor, tasted the proximity of elements and compounds needed for growth, initiating a cascade to awaken quiescent genetic material. What is life but a carbon contaminant with minute quantities of heavier elements? It doesn't take intelligence to survive; just as "determination" and "will" drives an acorn onto the quest to become an oak, so these two basic qualities of survival awoke the slumbering, ice-encrusted spore.

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The last tracted comet was a luke-warm slush within the dirty-water tanks. Distilling of gasses could now begin, enzymes and electricity bubbling out hydrogen and oxygen. These gasses in turn would be separated and stored in appropriate holding tanks elsewhere in the cube, compressed to a near metallic state and mixed with certain exotic stabilizers to prevent inadvertent ignition, knowledge of which originated from the long ago assimilation of Species #2. After several other stops throughout the system to complete Delta's list of needed supplies, a final layover would be made in the Oort cloud to top off the dirty-water tanks.

Delta peered at the data on the current system, wincing at the length of time since the last survey. {Captain. The smallest gas giant has records of both nitrogen- and sulfur-bearing moons. We need to go there.}

{The shopping list has expanded? You only needed asteroid metals before, with the comets a priority.} The impression of a raised eyebrow, for all that Borg did not have eyebrows,

accompanied the not-so-surprised tone.

{We are on a low-priority mission for the Collective, and this sub-collective well knows that it is an unknown as to the next time we will be back in civilized space with supply depots or small outposts which can be conveniently assimilated and stripped. We need the raw materials to keep replicators functional, or would you prefer to go without several key ingredients during regeneration several weeks from now?}

Exasperation. {Enough, Delta. You have absolutely no sense of humor.}

{Humor is irrelevant.} (Captain perfectly accompanied Delta in the stereotypical proclamation.)

{True, but you don't always have to be so defensively serious about it, you know.}

Captain pushed the cube to full impulse, moving the sub-collective deeper into the system.

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There was only instinct. The organism, a mold it would be defined as even though exotaxonomy is not an exact science, could taste the elements around itself in the liquid environment. It could grow, but not fast. The solid which contained the liquid also was useful, much more so than the water, for it had many of the trace compounds necessary for swifter growth.

Vacuoles of a digestive acid streamed through cytoplasm within pseudopod-like rhizoids, terminating at the point of metallic contact. As the exotic material was harvested, sequestered, and processed, holes grew in the side of the tank from microscopic to fist-sized. Water began to flow out, taking the mold on a ride.

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Body B was maneuvering about the exterior pipes and crenulations on the hull when Delta felt the sensors in holding tank #8 give alarm about a sudden drop in the reservoir. Delta queried a diagnostic of the area, rerouting body B to stop the hull examination and meet body A in the main energy core. Diagnostics were not looking well: water was now reported in the area. Delta erected a force field to contain the liquid, then sent forty-five of the engineering hierarchy nearest the tank to clean up, repair, and investigate the mishap. Delta finally locked the transporter on body A to send herself to the area to meet the detail.

Part of Delta rematerialized waist deep in water, cold liquid immediately seeping into the spaces between body suit and skin. Although comfort was supposedly irrelevant, vacuum in many ways was preferable in her mind to wading in comet slush. As body B began closely examining structural records to see if the accident could have been prevented through maintenance, body A turned to see where the dispatched crew had gone. Several drones peered into the tank room from an entryway beyond the border of the force field.

"Get your butts in here!" yelled Delta through body A. "There is work to do!" A couple of the drones looked at each other, but there was no complaint outwardly voiced where it could be heard. Bodies began to enter the sealed section, unenthusiastic posture turning into grumbles of displeasure as the water proved to be as wet as it looked. "You are neither going to melt nor rust; we need to pump this mess out of here." Pause. "Oh right...you may leave, 24 of 230, as you do tend to slough off large amounts of skin when you get wet."

Delta turned back to examine the outer wall of holding tank #8, a wake building as she

moved closer to the larger containment vessel. Several other holding tanks shared this large area, but this was obviously the origin of the mess. Obvious because even without sensor alarms, the series of seven double-fist sized holes from which water continued to trickle were the cause of the problem. Delta peered closer at the smoothly ragged holes, activating the zoom function on her optical implant; and at the same time she gave up the hunt in past records because delinquency in maintenance was not a contributing factor.

The holes almost looked as if they had been dissolved from the inside, although that was impossible. As with the other structural components of the ship, holding tanks were made from extremely durable ceramometallic alloys. The most caustic of fluoride-based acids could be held with ease; comet water would not eat a hole through cardboard, much less holding tank #8. A more in thorough investigation could take place later. For now, priority was repair and clean up of the mess.

Pumps began to make a loud rumble as they moved the water into another holding tank. Plasma welders melted patches onto the holed tank. Delta supervised it all.

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In a manner reminiscent of a terrestrial slime mold, only much accelerated, the organism moved up a metallic wall, seeking the infrared warmth which bathed the upper part of it, not that "up" had any meaning. Nothing but chemistry-based instinct held "meaning". The mold had no nervous system, only many centers of genetic material, call them nuclei for lack of a better term, floating in a streaming pool of cytoplasm. Many similar cells clung to each other in the classic form of a primitive multicellular organism, communicating via exchanged proteins and secretory chemicals. Instinct.

A point was finally attained where movement closer to the warmth triggered a stimulus to retreat. The mold puddled out, bringing as much of itself as close as possible to the border of infrared rejection. Powered by the radiant source, several previously undifferentiated cells started to produce sugars for storage, sequestering the polymers into huge vacuoles. This metabolic change cascaded to rest of the mold, initiating the production of specialized enzymes, as well as a "hunger" for certain compounds. Acid began once more to eat through the walls.

Below, loud noises and moving Borg drones created a spectacle. However, the mold had no ears to hear with, nor eyes to see. Instinct did not recognize the activity, and instinct was all that mattered.

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Delta had assigned three hundred drones each of her hierarchy to process nitrogen- and sulfur-compounds on the third and fifth moon of the small gas giant, respectively. Body A was currently on site in the coldly dense atmosphere of the nitrogen moon; body B should have been on the volcanic hell which was the second planetoid, helping to dig old sulfur deposits, but that was not the case. Delta had to rely on the remote impressions of viewpoints from drones on moon #5, for a multitude of strange failures were triggering the internal sensors of Cube #347.

All over the ship, concentrated in the cargo area which contained holding tank #8, structural integrity was weakening. Nothing had buckled as of yet, but stress fractures were being reported in the giant bundles of ceramometallic alloy beams which were the main framework around which the cube had been built. An analogy might be a humanoid body fearing the

crumbling of their internal skeleton due to osteoporosis. A multitude of conduits had also been breached, with repair crews discovering small holes suspiciously alike those first found decorating holding tank #8.

Delta had over seventy drones on active repair duty now. Normally only a third of the engineering hierarchy would be awake in any given moment, but currently almost three quarters, seven hundred fifty drones, were out of regeneration. Projects on the moons, roving repair teams, and normal maintenance had Delta working overtime, mentally in many places at once while coordinating her two selves to be doing the most good.

"Gah," muttered body A to herself as she "encouraged" a wayward member of a repair crew to stop admiring the spectacular, if harmless effects, of a light plasma leak venting on the hull. "Here I am dealing with over seven hundred of these numskulls, and Captain routinely coordinates four thousand when emergencies happen. I think I would go insane...if I didn't send most of the idiots of this cube to Doctor first for repair."

Adjusting the power output of the primary core with command codes through the computer, Delta prepared to activate ship-regeneration. The material-hungry and power-hogging system was more appropriate for battle conditions, but at the rate things were weakening, a battle might be the preferred alternative.

By the time Cube #347 had stopped in the asteroid field and located suitable rocks for processing, Delta had all the engineering hierarchy active. Even with ship-regeneration, structural integrity continued to be below acceptable limits.

{Captain,} called Delta, {I am going to need to borrow fifty drones from Doctor.}

{Mine? That is a sixth of my hierarchy! And I'm still busy dealing with a most astounding collection of problems acquired from that volcanic moon, not to mention repair requests generated from your push to process asteroids,} butted in Doctor as he heard his name mentioned.

Captain shushed Doctor. {Granted, but you cannot hold and direct that many bodies and minds. You are an excellent drone when it comes to engineering matters, but frankly, you are not of the mental persuasion to handle that much conflict. If you were, /you/ would be of the Hierarchy of Eight, and I would happily be taking orders from a lowly place within the engineering hierarchy. Therefore, a command and control partition will be assigned to assist.}

Delta, already pushing her limit, returned jauntily, {I will figure out what is happening...it is a major priority! I just need a few more bodies handling basic repairs while I direct a more in depth investigation as to the cause.} Delta refused to let the tiredness show, for all that she had been functioning at heightened levels for fifty-two hours. {The chosen asteroids will be processed slag in twelve hours, ready to be fed to the replicators. The load will be much lighter at that point.}

Fifteen hours later, Delta was longing for the quiet oblivion of her alcoves. She was not body-tired for all that she had been rushing herself about from one task to the next, but her mind was exhausted, even with command and control assistance, from directing what was now eleven hundred drones, over a quarter of the ship's compliment, some of which had also been awake since the beginning and were complaining they wanted regeneration time. Delta squelched each objection as it was voiced.

Fortunately, oh so fortunately, Delta had finally traced the cause of the problems. An unknown organism, a mold which appeared to live off of inert metallic compounds of all

improbable things, was slowly digesting the ship. It had been taken aboard as a spore within a comet nucleus, thus bypassing biofilters, the organic mass looking like simple background contaminants when sensor data for the comet had been reexamined. That was the good news. The bad news was getting rid of the lifeform before it ate everything, leaving the ship literally crumbled around its drone occupants, might be extremely tricky. Local data archives held nothing of use in combating the menace, primarily because it appeared the mold had never been encountered before. Gee...lucky Cube #347.

Putting the most optimistic tone in to her tired voice, Delta contacted Captain to provide a status update. Perhaps Collective archives might have some information of use, but Captain would need to be the one to mediate the search.

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The mold was sending many tendrils throughout its environment, searching for the compounds it needed for growth. The appropriate materials had yet to be found in sufficient quantities, but the organism engulfed enough inferior foods to grow quite large despite such problems. The concept of "large" was meaningless, only that current bulk was not adequate to trigger the next part of the organism's life cycle. Another barrier of low-grade growth media was breached, only to uncover a semi-liquid jackpot.

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Captain's query yielded a big blank, meaning Delta was on her own to come up with a solution. Portions of the mold, a nearly colorless and extremely slimy creature, had been found clustering around infrared heaters throughout the ship. Fire and vacuum became possible solutions as members of the engineering hierarchy offered opinions. Simple and primitive, but quite effective on normal organisms, Delta was about to initiate a program of eradication when a major alarm went off.

{Detection of foreign substance within regeneration system reservoir of subsection 2, submatrix 2,} quipped the computer as Delta queried for the reason behind the alert.

No expletive was strong enough to accurately describe the feeling which Delta experienced; she even did a quick search of language files. A fallback, however, existed, one which was present in the language of every species, and inevitably recorded as the final word before the pilot of plane or shuttle crashed.

"Sh**."

The regeneration system was a tightly controlled network of reservoirs and conduits which held the slush that held and distributed the sugars, proteins, carbohydrates, and other nutrients needed by every drone. Assimilation shut down the entire native digestive system, but the body still needed certain products, which the ship supplied during regeneration in mixes which were different for every species. A limited amount of contaminants the automated systems could work around, if not outright use, but the sheer size of the mold precluded that option.

Delta uploaded her concerns to Captain, effectively passing the buck. She did not want additional concerns to deal with on top of the latest crisis and the eleven hundred drones she was already coordinating. A recommendation to alleviate the most immediate problem until the mold could be flushed was attached to the general cry for help.

Incredulously Captain asked, {Are you sure? Have every single drone awake at the same

time?}

{Yes, Captain. The regeneration system is going to have to be shut down anyway, which will automatically kick everyone out of their alcoves.}

An impression of a headache, a reality which Delta was coming to know all too well, {Four thousand, the whole crew, active at once. Four thousand ways to physically cause trouble.} A sigh. {How long?}

{I do not know. I and a good number of other drones have already been without regeneration for over eighty hours. Depending on original species, two hundred to two hundred fifty hours is the maximum; and members will be dragging with body-fatigue in the end. Too long without regeneration, and the body /will/ die. The mind continues on in the Greater Consciousness, of course...but I don't think many of us are ready to hurry the process, at least not in such an unglamorous manner.}

Delta felt the ship alter course, heading towards the Oort cloud. {We will go back to where this whole fiasco began, assuming the organism does not get into any more vital systems. Repairs and maintenance is your hierarchy's bailiwick, Delta: if you don't manage to salvage this cube, it will become our tomb. For some reason I don't think the Greater Consciousness will shed many tears over our passing.}

Delta agreed as she turned back to the ideas of eradication via flames and void.

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Growth was explosive as necessary nutrients were absorbed. Enzymes and proteins modified the basic substances into compounds to be stored in vacuoles. No pain receptors registered the fact when portions of mold were destroyed by the cleansing flames of Delta's crews. Those parts which were torched were unneeded now that the bulk of the organism was drawing sustenance from the regeneration conduits. Most of the mold was unreachable, anyway, curled around the struts of the cube superstructure. It would take nothing less than total demolition of the ship accompanied by sterilization in plasma flames of a star to eradicate the it. The touch of vacuum when it came was similarly ineffective...but it did trigger the next stage of the life cycle.

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Delta was very tired; her fatigue affected the others in hierarchy, dragging them down further than if she had been fresh from the alcove. Physically unable to sleep, unable to take in desperately needed nutritional supplements other than by regeneration, Delta forced herself to continue. Ten drones had dropped in their tracks, half in the last two hours, body-fatigue forcing the organic part of the Borg into a protective hibernation from which complete regeneration was the only answer.

Closing the eyes of both of herself, Delta initiated implants near special glands in her bodies to release a stimulant similar to caffeine into her bloodstream. Her original species had a somewhat controllable glandular system which naturally produced many organic compounds ranging from endorphins to sedatives; implants made control full and exact. Most other drones did not have the ability, unfortunately. In example, Delta felt yet another member of the engineering hierarchy mentally blank.

{Doctor....} began Delta, searching the net for Doctor.

{I know. We are taking care of the problem now. If the regeneration system is not fixed soon, not only will more drones be entering stasis lock, those already so will begin to die.}

Delta sighed. Body A and body B were at widely separated places within the cube. While all instances of the visible mold had been charred successfully, exposing sections of the ship to vacuum did not seem to bother the organism. The vast majority of the mold was as tightly associated with the superstructure as fungus hypatia running through a slice of bread. The combined efforts of a thousand drones and ship-regeneration could not keep pace with ongoing destruction.

The truth was plain, if painful: there was no way to destroy the organism before the drones on the ship became non-functional. Perhaps the mold was a simple space-evolved parasite, perhaps an ancient bioweapon...the reality was nibbling Cube #347 to death like a flock of ducks.

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Sections of a genetically predetermined mass began to pull in towards a center, splitting the formerly single massive organism into several simply gigantic ones. Each "child" mold had sequestered sugars and other nutrients necessary for a long, if spartan, existence of torpidity. The borders of each mold no longer displayed receptors of communality, but instead actively expelled polypeptide messages of avoidance.

Regrouped, each child mold began to move quickly, seeking liquid in the form of water. Enzymes and proteins cascaded in their final series of chemical interactions - life cycle is complete, time to sleep.

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In yet another increasingly futile diagnostic of crumbling systems, Delta checked the overall health of the ship. Five drones had been declared dead, and another thirty-five stacked in Doctor's main workshop like so much cordwood. Over two hundred hours had passed since Delta had first woken her bodies from her alcoves. Her unoptimistic frame of mind was totally unprepared for the cube stasis report.

{Contaminant flushed from regeneration systems. Nanitic repair to 10% of superstructure damage. Estimated time to complete repair is four hours and twenty minutes.}

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Each mold, eleven in total, dissolved their way into separate holding tanks, settling to the bottom. A dense spore coat of nearly pure carbon formed around the increasingly senescent core of genetic material, armoring the organism to sudden changes in radiation, air pressure, temperature, and other environmental impacts. Chemical interactions slowed, the spore slept. Instinct did not allow for the noticing the flushing of each holding tank into space, nor the freezing of the water until it resembled nearby natural comet nuclei, indistinguishable via sensors except for large amounts carbon with significant traces of heavier elements.

Life cycle successful and complete.

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Jacked into exterior sensors, Delta watched the contaminated ice chunks float away. A report would be sent to the Greater Consciousness concerning the dangers of this system's Oort cloud - it may have been just coincidence to pick up the mold, or a great majority of the nuclei could have dangerous spores in them. The ordering of memories to be filed as formal data could wait, however.

It was time to sleep. Delta's bodies were weary and hungry as only a Borg drone could know. Most of the crew had already returned to their alcoves, although Delta could feel a few still active. Doctor was continuing his work on those which had fallen during the crisis, and Captain and Second were communicating with Sensors' hierarchy as to the closest cube repair facility. Triggering her bodies to enter regeneration, Delta freed her mind to join the others. Damn the engineering docket for awhile and let trivial repairs pile up. Another day, an extremely long day, was finally concluded.